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Response to Office Action Dated 04/26/2005

REMARKS

1 A review of the claims indicates that claims 1—22 and 24 remain in their
2 original form. Claim 23 is currently amended.

3 In view of the following remarks, Applicant respectfully requests
4 reconsideration of the rejected claims.

Drawings

5 A separate two-month time period was provided for submission of
6 corrected drawings. In response, corrected drawings were Express Mailed on
7 06/24/2005.
8

9 However, it was noticed that in Fig. 14, "10" should be --110--.
10 Accordingly, another Corrected Drawing Request has been filed with this
11 Response.

35 U.S.C. §102 Rejections

12 Applicant submits that the Office has failed to establish a *prima facie* case
13 of anticipation and respectfully traverses the Office's rejections. However, before
14 discussing the substance of the Office's rejections, sections entitled "The Instant
15 Application" and "The Ichida Reference" are provided, which describe the current
16 application and Ichikawa's disclosure and teachings, respectively.
17

The Instant Application

18 Among other things, the instant application teaches that plotter-type
19 printers can have very large rolls of very wide print media. The media used
20 can vary widely in size; accordingly, test patterns may result in substantial
21 waste of both ink and media.
22

23 To prevent this waste, the Applicant teaches adjusting the relative
24 position on the print medium of a plurality of elements of the test pattern to be
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1 printed. Referring to the Applicant's Fig. 10 and to the text at page 15, lines 8—
2 25, the test pattern 52 is configured for narrow print media, and will therefore
3 result in a large waste, if wider print media 12 is used. Referring to Fig. 11, it can
4 be seen that by rearranging the relative position of the elements, a test pattern 55
5 can be generated, within which media waste is greatly reduced. Thus, for a wide
6 enough print media, the test pattern 55 is desirable, while for a narrower print
7 media, the test pattern 52 is desirable.

8 Thus, the Applicant teaches adjusting the relative position of the elements
9 within a test pattern on the print media based on the size of print media. As an
10 example, in Fig. 10, the elements of the test pattern have been adjusted into a
11 vertically in-line position, while in Fig. 11, the elements of the test pattern have
12 been adjusted into a horizontally in-line position.

13 The Ichikawa Reference

14 Generally, Ichikawa discloses a method and apparatus for testing an
15 output device (See, Ichikawa, title). In relevant part, Ichikawa teaches
16 generation of a test pattern, such as for use by a printer in determining
17 quality of print output. For example, Fig. 1 of Ichikawa shows a test pattern
18 generating program 20, test pattern files 22, a device under test (a printer) 12
19 and a printed output 26.

20 Ichikawa addresses a problem that may result if a test pattern is not
21 designed to fit a sheet of print media. For example, the test pattern might
22 not fit on A4 paper. Thus, in Fig. 11, at block 1110 a check is made to see if
23 a paper size transformation is necessary, and if so, at block 1112 a
24 coordinate transformation is made. Referring to column 6 of Ichikawa, the
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1 "magnification" or "de-magnification" of the test pattern is discussed
2 (column 6, line 29) is discussed. (See also, Fig. 12, #44) The mechanics of
3 the magnification (or de-magnification) is seen at column 6, lines 49—63.
4 Thus, the test pattern is magnified (or compressed) in the X- and Y-
5 directions, thereby creating a test pattern that will actually fit on the print
6 media. The magnification or de- magnification is performed by the equation
7 found in column 7, line 15. Accordingly, test patterns can be "stretched" to
8 fit the size available.

9 Traversal of the §102 Rejections

10 Claims 1, 2, 5—8, 16, 17 and 19—22 were rejected under §102 as being
11 anticipated by U.S. Patent No. 5,729,555, hereinafter "Ichikawa." In response, the
12 Applicant respectfully traverses the rejection.

13
14 **Claim 1** recites a method of printing a test pattern, having a plurality of
15 elements, for determining an operational parameter of a printing device
16 comprising:

- 17 • determining the size of a print medium presently loaded in the
18 printing device;
- 19 • adjusting, in accordance with the determined size of the print
20 medium, the relative position on the print medium of a plurality of
21 elements of the test pattern to be printed; and
- 22 • printing the test pattern on the print medium.

23 The Ichikawa does not disclose adjusting *the relative position* on the print
24 medium of a plurality of elements of a test pattern.

25 Instead, Ichikawa discloses "coordinate transformation" (see Fig. 11, block
1112). In Fig. 12, a coordinate transform section 42 applies a "magnification" or
"de- magnification" to the test pattern image, thereby sizing the test pattern for

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1 the type of paper to be used. Column 6 discloses how coefficients used for
2 magnification of the image are calculated, and the equation in column 7 discloses
3 how the actual magnification is performed.

4 Accordingly, Ichikawa does not disclose adjusting the *relative position* of
5 any elements within the test pattern. Instead, all of the elements are inflated (or
6 deflated) in unison, so that their relative positions remain unchanged.

7 The Patent Office suggests that the pattern transformation disclosed by
8 Ichikawa at column 6, lines 21—28 is an adjustment of the relative position of a
9 plurality of elements.
10

11 However, the relative position of any elements is unchanged by the
12 “magnification” ratio of equations (1) and (2) of column 6 of Ichikawa. Instead of
13 changing the relative position of elements within the test pattern, Ichikawa
14 discloses only magnifying or miniaturizing the test pattern to fit.

15 In contrast, the Applicant changes the relative position of the elements
16 within the test pattern. For example, in Fig. 10, the elements of the test pattern are
17 vertically in-line. In contrast, in Fig. 11, the elements of the test pattern are
18 horizontally in-line. Thus, the elements of the test pattern, in Figs. 10 and 11,
19 have *different relative positions*.
20

21 The difference in the operation of the recited elements in the Applicant’s
22 claim and the disclosure by Ichikawa is important. For example, the Applicant is
23 able to adjust a test pattern in accordance with the media size. For example, for
24 very wide media (e.g. 60-inch wide rolls of paper) the Applicant can adjust the
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1 relative position to be horizontally in-line (e.g. Fig. 11). For more nearly square
2 sheets of 8.5" by 11" letter-sized paper, the relative position of the elements of the
3 test pattern can be adjusted to be vertically in-line (e.g. Fig. 10). In contrast,
4 Ichikawa is not able to adjust relative position, but can only 'inflate' or 'deflate'
5 the test pattern. If the width of the paper is very wide (e.g. 60 inches) then
6 Ichikawa's test pattern may be thousands of square inches in area.

7
8 **Claim 2** recites the method of claim 1, further comprising:

- 9 • arranging the elements of the test pattern during said adjusting step
10 in a layout which substantially minimizes the amount of print
medium that is expended to print the whole test pattern.

11 The Ichikawa does not disclose an adjusting step the substantially
12 minimizes the amount of print medium that is expended to print the whole test
13 pattern. Instead, Ichikawa teaches how to fill the sheet of print media with the test
14 pattern. Thus, for very wide print media (e.g. 60-inch wide, on rolls) the test
15 pattern would be magnified to a width of 60" and a proportionally huge height. In
16 contrast, the Applicant rearranges the elements of the print media. In many
17 applications, such as wide rolls of sheet media, this can allow the Applicant to
18 print the test pattern on a wide but short strip of print media, thereby minimizing
19 the amount of print media used.

20
21 The Patent Office suggests that by adjusting the X and Y coordinates, the
22 test pattern is adjusted to fit a sheet of paper.

23
24 However, in many applications there is no "sheet." For example, when
25 print media is on rolls, it may have a fixed width (e.g. 60") but could be arbitrarily

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1 long. Thus, "adjusting to fit the paper size" does not save paper. What saves
2 paper is the Applicant's recited elements, "adjusting...the relative position...of
3 elements of the test pattern." By adjusting to fit the paper, the Ichikawa system
4 might print a test pattern 60" wide and 78" tall. In contrast, the Applicant might
5 print a test pattern 60" wide and 2" tall. For example, a comparison of Figs 10 and
6 11 of the Applicant's disclosure show how the elements can be rearranged and the
7 size of the test pattern can be minimized.

8
9 Accordingly, Ichikawa has not disclosed the recited elements, which would
10 substantially minimize the amount of print medium that is expended to print the
11 whole test pattern, and the Applicant respectfully requests that the rejection be
12 withdrawn.

13
14 **Claim 16** recites the method of claim 1, further comprising:

- 15 • wherein at least one of the elements of the test pattern comprises a
16 plurality of sub-elements, the method further comprising:
- 17 • adjusting the size of at least one sub-element of said at least one
18 element to be printed in accordance with the determined size of the
19 print medium, but not reducing below a minimum size of sub-
20 element necessary to determine the operational parameter of the
21 printing device, during the print medium adjusting step.

22 Careful examination of the cited passage in Ichikawa does not disclose the
23 two structures analogous that are to elements and sub-elements. Moreover, the
24 concept of a minimum size of a sub-element (or other feature) of a test pattern
25 does not appear to be disclosed. Additionally, the concept of not reducing below a
minimum value is not disclosed.

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1 The Patent Office suggests that column 6, lines 30—63 of Ichikawa
2 discloses that magnification has limits; however, the claim recited 'not reducing
3 below a minimum' and did not disclose magnification.

4 The Ichikawa reference fails to disclose two (2) structures analogous to
5 elements and sub-elements. Ichikawa fails to disclose the concept of a minimum
6 size of a sub-element (or analogous structure). Additionally, Ichikawa fails to
7 disclose not reducing below the minimum size. Accordingly, Ichikawa has not
8 disclosed the recited elements, and the Applicant respectfully requests that the
9 rejection be withdrawn.
10

11 **Claim 19** recites the method of claim 1, further comprising:

- 12 • arranging the elements of the test pattern in a layout which
13 substantially maximizes the accuracy with which the operational
14 parameter of the printer may be determined, during the adjusting
step.

15 The Ichikawa reference discloses magnification and de-magnification (see
16 Fig. 12, number 44). Magnification and de-magnification is not "arranging."
17 Arranging locates different elements in different relative positions on the test
18 pattern. The Applicant has disclosed (Figs. 10 and 11) arranging elements
19 vertically and horizontally in-line. Thus, Ichikawa fails to show "arranging."
20 Accordingly, Ichikawa does not show "arranging elements" to "maximize the
21 accuracy" of the operational parameter.
22

23 The Patent Office suggests that magnification is performed to maximize
24 accuracy for page size changes. The Applicant respectfully suggests that this
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1 *reasoning is circular*, in that the page size was the input to determine the
2 magnification. Thus, the magnification is not used to maximize accuracy in
3 determining page sizes, since they are already known.

4 Accordingly, the Applicant respectfully requests that the Patent Office
5 remove the rejection to this claim.

6
7 **Claim 20** recites the method of claim 1, further comprising:

- 8 • wherein at least one of the elements of the test pattern comprises a
9 plurality of sub-elements, the method further comprising.
- 10 • adjusting either the size of at least one sub-element or the number of
11 sub-elements to be printed or both the size and the number of sub-
12 elements in accordance with the determined size of the print
medium, to substantially maximize the accuracy with which the
operational parameter of the printer may be determined, during the
adjusting step.

13 The Ichikawa reference includes several "graphics order definition tables"
14 (see column 5, line 38). Generally, "tables" are a data structure, whereas a test
15 pattern is a hard-copy output of a printer. Accordingly, the tables are not test
16 patterns and the patterns are not sub-elements that are defined on a test pattern.

17 The Patent Office suggests that the graphics order definition tables are
18 analogous to the elements and sub-elements of a test pattern. The Applicant
19 respectfully disagrees.

20
21 What Ichikawa is showing is a data structure that is organized as a table,
22 wherein the table defines graphical order definitions. Therefore, Ichikawa does
23 not disclose a "test pattern comprises a plurality of sub-elements," as recited by
24
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the claim. Accordingly, the Applicant respectfully requests that the Patent Office remove the rejection to this claim.

Claim 21 recites the method of setting an operational parameter of a printing device comprising the steps of:

- determining the size of a print medium presently loaded in the printing device;
- adjusting, in accordance with the determined size of the print medium, the relative position on the print medium of a plurality of elements of a test pattern to be printed;
- printing the test pattern on the print medium;
- determining from the printed test pattern a value for the operation parameter of the printing device; and
- setting the operational parameter of the printer to said determined value.

Claim 21 is allowable for the same and similar reasons that claim 1 is allowable. Accordingly, the Applicant respectfully requests that the rejection to claim 21 be removed.

Claim 22 recites the method of claim 21, further comprising:

- arranging the elements of the test pattern during said adjusting step in a layout which substantially minimizes the amount of print medium that is expended to print the whole test pattern.

Claim 22 is allowable for the same and similar reasons that claim 2 is allowable. Accordingly, the Applicant respectfully requests that the rejection to claim 22 be removed.

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1 **Claims 5—8 and 17** are allowable by virtue of their dependence from a
2 claim which is allowable for the reasons seen above, as well as for reasons
3 associated with each of claims 5—8 and 17.

4
5 **The §103 Rejections**

6 **Claim 23** was rejected as being unpatentable over Ichikawa in view of US
7 Patent No. 8,828,818 (hereinafter “Anzai”).

8
9 **Claim 23**, as amended, recites a printing apparatus having a settable
operational parameter, the apparatus comprising:

- 10 • a print engine capable of receiving instructions to print data;
- 11 • a media advancing mechanism into which print media is loadable;
- 12 • a media measurer for measuring the size of loaded print media;
- 13 • a memory for storing a printable test pattern having a plurality of
separable elements; and
- 14 • a processor having an input for receiving size data regarding the
presently loaded print medium from the media measurer and an
output to the print engine for passing instructions to print a test
pattern;
- 15 • wherein the processor, in use, *adjusts, in accordance with the*
16 *determined size of the print medium, the relative position on the*
17 *print medium of a plurality of elements of the test pattern to be*
18 *printed.*

19 Therefore, claim 23, as amended, is allowable for the same reasons that
20 claim 1 is allowable. Moreover, Anzai fails to remedy the deficiencies of
21 Ichikawa. Accordingly, the Applicant respectfully requests that the rejection of
22 claim 23 be removed.

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1 Claims 3—4, 9—11, 12—15, 18 and 24 are allowable by virtue of their
2 dependence from a claim which is allowable for the reasons seen above, as well as
3 for reasons associated with each of claims 3—4, 9—11, 12—15, 18 and 24.

4 **Conclusion**

5 The Applicant submits that all of the claims are in condition for allowance
6 and respectfully requests that a Notice of Allowability be issued. If the Office's
7 next anticipated action is not the issuance of a Notice of Allowability, the
8 Applicant respectfully requests that the undersigned attorney be contacted for the
9 purpose of scheduling an interview.
10

11

12 Respectfully Submitted,

13

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15

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